

METHOD OF CONFLICT AVOIDANCE IN FABRICATION OF GATE-SHRINK ALTERNATING PHASE SHIFTING MASKS

Abstract

A method of designing a layout of an alternating phase shifting mask for projecting an image of an integrated circuit design having a plurality of features to be projected using alternating phase shifting segments, including a gate-shrink region of a transistor having a critical width along a length thereof that extends beyond a diffusion region. The method also provides alternating phase shift design rules based on alternating phase shift design parameters comprising minimum phase width, minimum phase-to-phase spacing, and minimum extension of critical width beyond another feature. The method then includes identifying portions of the integrated circuit layout having a critical width feature that violate the alternating phase shift design rules, and reducing the length that the critical width gate-shrink region feature extends beyond the other diffusion region feature to the minimum extension. An alternating phase shifting mask layout is then generated in conformance with the alternating phase shift design

rules.